

WHAT IS CLAIMED:

1 1. A method for use in apparatus of a communications system, the method
2 comprising the steps of:
3 decoding block encoded data for removing the block encoding from the data;
4 mapping the data into a variable length protocol data unit (PDU) for transmission
5 over a synchronous transport medium.

1 2. The method of claim 1 wherein the PDU comprises a header portion and a
2 payload portion and includes a type field representing whether the data represents a data
3 frame or a control frame.

1 3. The method of claim 1 wherein the transport medium is bit/byte synchronous.

1 4. The method of claim 1 wherein the transport medium is a synchronous optical
2 network (SONET).

1 5. The method of claim 1 wherein the mapping step maps the data into a
2 simplified data link (SDL) PDU.

1 6. The method of claim 1 wherein the decoding step further comprises the steps
2 of:
3 receiving a fibre channel (FC) signal representing the block encoded data; and
4 decoding the FC signal for removing the block encoding from the data.

1 7. The method of claim 1 wherein the decoding step further comprises the steps
2 of:
3 receiving an enterprise systems connection (ESCON) signal representing the
4 block encoded data; and
5 decoding the ESCON signal for removing the block encoding from the data.

1 8. A method for use in communications apparatus, the method comprising the
2 steps of:

- 3 (a) receiving a signal representing block encoded data;
- 4 (b) decoding the receiving signal for removing the block encoding from the data;
- 5 (c) determining whether the data represents, at least, a control frame type or a data
- 6 frame type;
- 7 (d) comparing the determined type to a type of previous data, which represents at
- 8 least one previously decoded block of data;
- 9 (e) if the determined type is different from the type of previous data, formulating
- 10 the previous data into a variable length payload data unit (PDU) for transmission over a
- 11 synchronous transport medium; and
- 12 (f) if the determined type is not different from the type of previous data, storing
- 13 the data in a buffer.

1 9. The method of claim 8 wherein step (f) includes the steps of:

2 determining if the buffer is full; and

3 if the buffer is full, formulating the buffered data into a variable length PDU for

4 transmission over the synchronous transport medium.

1 10. A method for use in apparatus of a communications system, the method

2 comprising the steps of:

3 receiving a signal from a synchronous transport medium, wherein the signal

4 represents information conveyed in a variable length protocol data unit (PDU);

5 decoding the PDU by examining a type field of the PDU, wherein the type field

6 indicates whether data in a payload portion of the PDU represents either a data frame or a

7 control frame; and

8 block encoding the data for transmission.

1 11. The method of claim 10 wherein the transport medium is bit/byte

2 synchronous.

1 12. The method of claim 10 wherein the transport medium is a synchronous

2 optical network (SONET).

1 13. The method of claim 10 wherein the block encoding step further comprises the
2 step of forming a fibre channel (FC) signal representing the block encoded data.

1 14. The method of claim 10 wherein the block encoding step further comprises the
2 step of forming an enterprise systems connection (ESCON) signal representing the block
3 encoded data.

1 15. Apparatus for use in a communications system, the apparatus comprising:
2 a decoder operative on block-encoded data for removing the block encoding from
3 the data; and
4 a mapper for mapping the data into a variable length protocol data unit (PDU) for
5 transmission over a synchronous transport medium.

1 16. The apparatus of claim 15 wherein the PDU comprises a header portion and a
2 payload portion and includes a type field representing whether the data represents a data
3 frame or a control frame.

1 17. The apparatus of claim 15 wherein the transport medium is bit/byte
2 synchronous.

1 18. The apparatus of claim 15 wherein the transport medium is a synchronous
2 optical network (SONET).

1 19. The apparatus of claim 15 wherein the mapper maps the data into a simplified
2 data link (SDL) PDU.

1 20. The apparatus of claim 15 wherein the decoder is operative on a fibre channel
2 (FC) signal representing the block encoded data, and decodes the FC signal for removing
3 the block encoding from the data.

1 21. Apparatus for use in a communications system, the apparatus comprising:
2 a decoder operative on a received a signal from a synchronous transport medium,
3 wherein the signal represents information conveyed in a variable length protocol data unit

(PDU), the decoder decoding the PDU by examining a type field of the PDU, wherein the type field indicates whether data in a payload portion of the PDU represents either a data frame or a control frame; and
an encoder for block encoding the data for transmission.

22. The apparatus of claim 21 wherein the transport medium is bit/byte synchronous.

23. The apparatus of claim 21 wherein the transport medium is a synchronous optical network (SONET).

24. The apparatus of claim 21 wherein the encoder forms a fibre channel (FC) signal representing the block encoded data.

25. A transmission frame representing data embodied in signal conveyed over a synchronous transport medium, the transmission frame comprising:

a variable length packet, the variable length packet comprising:

a header, which includes at least a length field indicative of a length of the variable length packet;

a type field representing a type of data conveyed in a payload portion of the packet, wherein the type is, at least, either a data frame or a control frame; and
the payload portion for conveying the data.

26. The apparatus of claim 25 wherein the header includes an error correction field.

27. A transmission frame representing data embodied in signal conveyed over a synchronous transport medium, the transmission frame comprising:

a variable length packet, the variable length packet comprising:

a header, which includes at least a length field indicative of a length of the variable length packet;

a type field representing a type of data conveyed in a payload portion of the packet, wherein the type is, at least, either a fibre channel (FC) data frame or

8 an FC control frame; and
9 the payload portion for conveying the data.

1 28. A transmission frame representing data embodied in signal conveyed over a
2 synchronous transport medium, the transmission frame comprising:
3 a variable length packet, the variable length packet comprising:
4 a header, which includes at least a length field indicative of a length of the
5 variable length packet;
6 a type field representing a type of data conveyed in a payload portion of
7 the packet, wherein the type is, at least, either an enterprise systems connection
8 (ESCON) data frame or an ESCON control frame; and
9 the payload portion for conveying the data